

A REVIEW OF THE GENUS *OXYOIDES* (ORTHOPTERA, CATANTOPIDAE) WITH DESCRIPTION OF A NEW SPECIES

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Abstract The genus *Oxyoides* Zheng et Fu, 1994 is reviewed with description of a new species, *O. longianchorus* sp. nov., *Oxyoides* Fu, Peng et Zhu, 1995, is considered as a new junior synonym of *Oxyoides* Zheng et Fu, 1994 and *O. wulingshanensis* Fu, Peng et Zhu, 1995 as a new junior synonym of *O. wulingshanensis* Zheng et Fu, 1994. A key to all known species of the genus is presented.

Key words *Oxyoides*, Catantopidae, review, new species, China.

The genus *Oxyoides* was established by Zheng and Fu in 1994. It originally included only one species, i.e. the type species *O. wulingshanensis* Zheng et Fu, which was described on the basis of a single male specimen. The second species, *O. bamianshanensis* Fu et Zheng, was described in 1999, also based on a single male specimen (Fu and Zheng 1999a). In this paper, a new *Oxyoides* species is described and the two known species have been briefly redescribed. The genus looks endemic to China, and the specimens are quite rare. In addition to morphological descriptions, there is only one report so far on the karyotype and G banding pattern of *O. bamianshanensis* (Fu and Zheng, 1999b).

Oxyoides Zheng et Fu, 1994

Oxyoides Zheng et Fu, 1994. *Acta Zootaxonomica Sinica*, 19 (1): 100.

Oxyoides Zheng et Fu, 1994. Li and Xia, 2006. *Fauna Sinica, Insecta*, 43: 88.

Oxyoides Fu, Peng et Zhu, 1995. *Entomology Research*, 1: 58, new synonym.

Type species: *Oxyoides wulingshanensis* Zheng et Fu, 1994.

Body medium sized. Frontal ridge distinct, longitudinally sulcate throughout. Antennae filiform, exceeding the posterior margin of pronotum. Pronotum cylindrical, lateral carina absent. Prosternal spine subconical, slightly compressed anteroposteriorly or laterally, apex pointed. Tegmina and hind wing reduced but not scale like, slightly touching or not touching along dorsal keel of abdomen. Upper carinae of hind femora smooth, keenly spined at apex; lower genicular lobes spined. Hind tibiae expanded in apical half to form lamellate margins or with only carinate margins, external apical spine present. Apex of subgenital plate truncate in dorsal view. Epiphallus with distinct ancora.

The genus *Oxyoides* shares with the genus *Oxya* Serville many morphological characters such as vertex convex, lateral foveolae absent, hind tibiae with external apical spine, supra-anal plate triangular, and so on, but it differs obviously from the latter in its reduced tegmina

that are separated from each other at the dorsum of abdomen, apex of male subgenital plate truncate, distinct ancora on epiphallus, and even in karyotype and G banding pattern (Fu and Zheng, 1999b).

Distribution. China (Hunan, Jiangxi).

Remark. Fu, Peng and Zhu (1995) proposed a name *Oxyoides* as a new genus to contain a new species, *Oxyoides wulingshanensis*, without any morphological description, illustration and designation of type species and type specimens, resulting in a nomen nudum taxonomically. *Oxyoides* Zheng et Fu, 1994 and *Oxyoides* Fu, Peng et Zhu, 1995 are two generic names proposed to contain the same species, so the latter is a junior synonym.

Key to species of the genus *Oxyoides*

1. Pronotum with posterior margin bluntly angulate, median keel distinct for all of its length; prosternal spine slightly compressed anteroposteriorly, nearly lamellate; tegmina extending beyond the posterior margin of the second abdominal tergite, hind wing slightly longer than tegmina; hind tibiae expanded in apical half to form lamellate margins *O. wulingshanensis* Zheng et Fu
Pronotum with posterior margin roundedly curved, median keel visible at metazona but absent at prozona; prosternal spine slightly compressed laterally; tegmina not reaching the posterior margin of the second abdominal tergite, hind wing distinctly shorter than tegmina and covered completely by the latter; hind tibiae with only carinate margins 2
2. Median segments of antennae about two times as long as broad; interocular space equal to width of frontal ridge between antennal socket; epiphallus normal in shape, ancora short and not sickle like *O. bamianshanensis* Fu et Zheng
Median segments of antennae about two and a half to three times as long as broad; interocular space wider, about one and a half times as wide as frontal ridge between antennal socket; epiphallus peculiar in shape, ancora long and sickle like, densely covered with small spines *O. longianchorus* sp. nov.

Oxyoides bamianshanensis Fu et Zheng, 1999

Oxyoides bamianshanensis Fu et Zheng, 1999. *Acta Zootaxonomica Sinica*, 24 (4): 384.

Oxyoides bamianshanensis Fu et Zheng; Li and Xia, 2006. *Fauna Sinica, Insecta*, 43: 90.

Male. Body medium sized. Vertex convex angulately in dorsal view, foveolae absent, interocular

space equal to width of frontal ridge between antennal socket. Antennae filiform, with median segments about two times as long as broad. Eyes oval. Pronotum cylindrical, anterior margin slightly concave in the middle, posterior margin roundly curved, median keel visible at metazona, but lateral carina absent. Prosternal spine subconical, slightly compressed laterally, apex pointed. Both tegmina and hind wing reduced; tegmina nearly contiguous to each other along the dorsal keel of abdomen, slightly exceeding the middle of the second abdominal segment, but not reaching the posterior margin of it; apex of tegmina narrowly rounded. Hind wing narrow, distinctly shorter than tegmina and completely covered by the latter. Hind femora slightly slender. Hind tibiae with carinate margins in the apical half. Tergite of the subterminal (the tenth) abdominal segment split in the middle, furcula absent. Subgenital plate with truncate apex in dorsal view. Epiphallus having distinct ancora with bluntly rounded apex; anterior and posterior projections distinct and obtusely rounded; lophi semicircular; bridge broadly lamellate, its anterior margin slightly and broadly concave in the middle, with four thick obtuse teeth in ventral view; lateral plate distinctly concave.

Body yellowish green. Eyes brown, postocular band black and broad. Dorsum of head and pronotum, tegmina brown. Frons, genae, lateral lobe of pronotum yellow. Legs and abdomen yellowish green, Hind tibiae bluish green, except the base and spines as well as apices of hind femora black.

Body length 22.5 mm; pronotum length 5 mm; tegmina length 5.3 mm; hind femur length 11.5 mm.

Female. Unknown.

Material examined. Holotype, ♂, China, Bamianshan Natural Reserve, Qingshan Town, Guidong County, Hunan Province (26°02' N, 113°45' E, alt. 600 m), 20 Aug. 1996, HUANG Jiarr Hua.

Distribution. China (Hunan).

Oxyoides longianchorus sp. nov. (Figs. 1-11)

Male. Body medium sized. Head shorter than pronotum. Vertex convex in dorsal view, with fastigium bluntly rounded, dorsum distinctly depressed, lateral foveolae absent. Interocular space about one and a half times as wide as frontal ridge between antennal socket. Occiput with indistinct median keel, finely punctate at sides of the middle. Face oblique in profile view. Frontal ridge distinct, extending to clypeus, longitudinally sulcate throughout, with lateral carinae nearly parallel. Antennae filiform, extending beyond the posterior margin of pronotum, 24 segmented, the fourth segment shortest and median segments about two and a half to three times as long as broad. Eyes oval, with longitudinal diameter about one and a half times as long as the horizontal diameter and about two and a half times as long as

subocular furrow. Pronotum cylindrical, irregularly and coarsely reticulate, with anterior margin straight, posterior margin roundly curved, median keel visible at metazona but absent at prozona, lateral carina absent; three transverse sulci distinct and prozona about one and a two third times as long as metazona; lateral lobe of the pronotum longer than high, with anteroventral corner curved roundly and posteroventral corner subrectangular. Prosternal spine subconical, slightly compressed laterally, apex pointed. Mesosternal lobes distinctly broader than long, interspace between them about five times as long as broad; metasternal lobes contiguous with each other. Both tegmina and hind wings reduced; basal third of tegmina touching each other, and the remainder separated gradually along dorsal keel of abdomen; apex of tegmina obtusely rounded, just reaching posterior margin of the second abdominal segment; hind wing narrow, distinctly shorter than tegmina and covered completely by the latter. Hind femora slightly slender, with upper carinae smooth and keenly spined at apex; lower genicular lobes spined at apex. Hind tibiae with carinate margins in the apical half, with eleven to twelve spines at inner margin, ten spines at outer margin, both inner and outer apical spines present. Hind tarsi with the first segment slightly shorter than the third one; arolium large. Tympanum developed, with oval aperture. Tergite of the ninth abdominal segment with a semicircular sulcus. Furcula absent. Supra anal plate triangular, as long as broad, apex bluntly rounded (or pointed in some individuals), basal half broadly depressed at both sides, the middle portion with a broad longitudinal sulcus, which is intersected by a median transverse sulcus and less distinct in apical half (absent even in some individuals). Cerci long and conical, apices pointed and extending beyond the supra anal plate. Subgenital plate conical, apex truncate in dorsal view, and slightly concave in the middle.

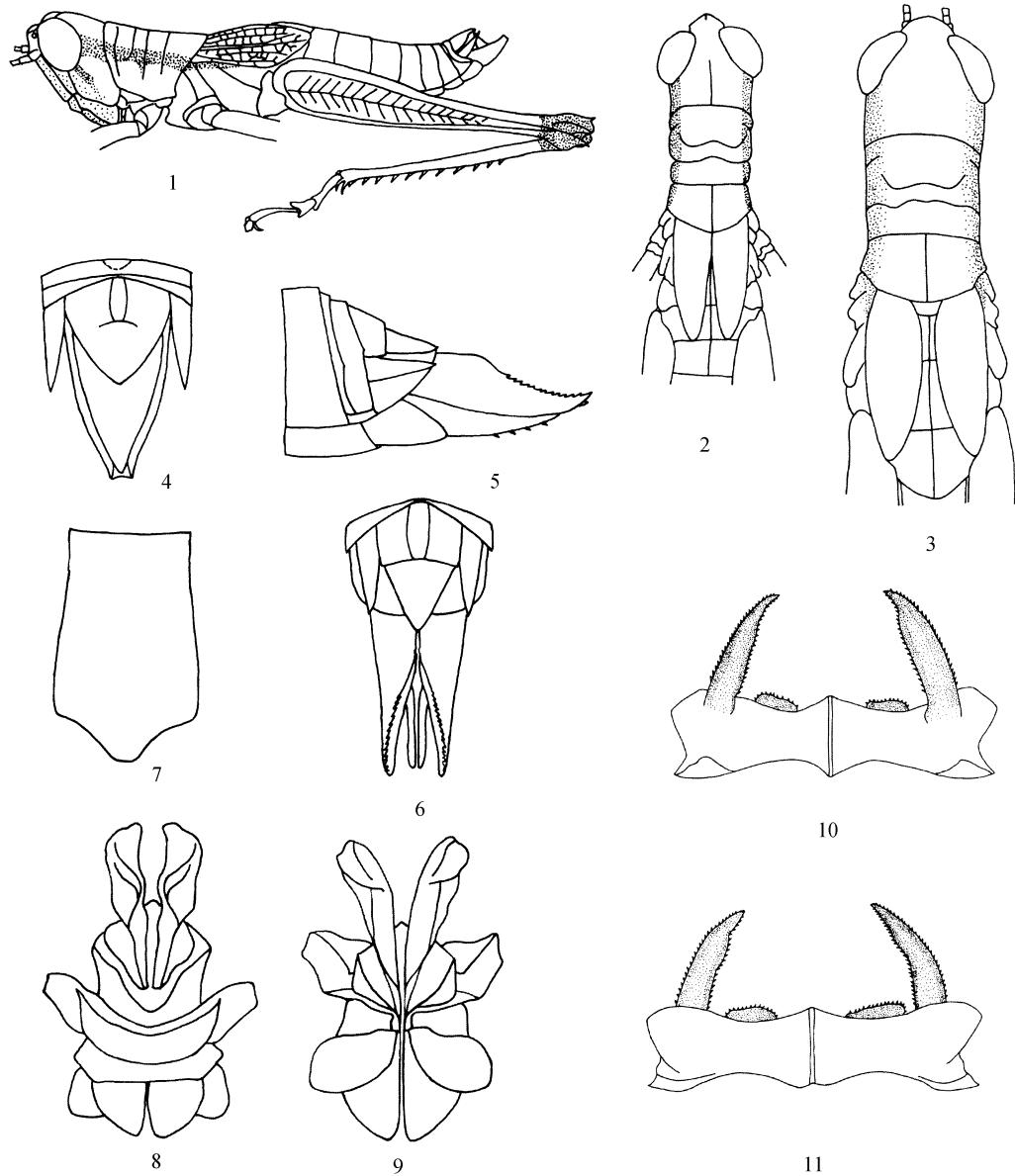
Epiphallus peculiar in shape; bridge relatively broad, nearly as broad as lateral plate, anterior margin with a large prominence at each side of the middle; ancora long and sickle like, densely covered with small spines; anterior projection large; lateral plate concave distinctly; posterior projection tapering towards apex; lophi subtriangular. Phallic complex with basal valves of penis long and suboval, both apical valves of penis and valves of cingulum broadly lamellated, and zygoma very broad.

Body yellowish brown. Antennae yellowish brown to reddish brown. Eyes pale brown with blackish brown macula in irregular shapes. Postocular band black, extending to posterior margin of pronotum. Occiput, dorsum of pronotum, tegmina and abdomen brown. Face, gena and lower half of lateral lobe of pronotum yellow. Labrum, clypeus, face and anterior half of gena

densely covered with black punctures. Gena with a black longitudinal band just below eye. Fore legs, middle legs and hind femora yellowish green. Hind tibiae bluish green, except the base and spines as well as apices of

hind femora black.

Body length 23.57 mm, pronotum length 4.96 mm, tegmina length 5.58 mm, hind femur length 15.35 mm.



Figs 1-11. *Oxyoides longianodus* sp. nov. 1. Body of male in profile view. 2. Head, thorax and anterior portion of abdomen of male in dorsal view. 3. Head, thorax and anterior portion of abdomen of female in dorsal view. 4. Abdominal apex of male in dorsal view. 5. Abdominal apex of female in profile view. 6. Abdominal apex of female in dorsal view. 7. Subgenital plate of female in ventral view. 8. Phallic complex in dorsal view. 9. Phallic complex in ventral view. 10. Epiphallus in dorsal view. 11. Epiphallus in ventral view.

Female. Similar to male. Body relatively larger, occiput without median keel, tegmina separated along dorsal keel of abdomen, apices of tegmina reaching the middle or posterior margin of the second abdominal segment. Supra-anal plate with apical half obviously lower than basal half in profile view. Subgenital plate convex in the middle of posterior margin. Apices of hind femora and base of hind tibiae brown to blackish brown.

Dorsal valves of ovipositor armed with relatively large teeth, and ventral valves sparsely armed with small teeth.

Body length 28.68-29.15 mm; pronotum length 6.05-6.51 mm; tegmina length 6.36-6.82 mm; hind femur length 18.45-19.07 mm.

Paratype males. Body length 24.65-25.58 mm; pronotum length 5.12-5.27 mm; tegmina length 6.05-6.20 mm; hind femur length 15.04-15.50 mm.

Type Materials. Holotype ♂, China Jiulianshan Natural Reserve, Longnan County, Jiangxi Province (24°35' N, 114°27' E), 19 Aug. 2000, HUANG Jiarr Hua. Paratypes, 2 ♂♂, 2 ♀♀, data same as holotype. Deposited in insect collection of Guangxi Normal University, Guilin, China.

Etymology. The species is named from the Latin “*longus*” and “*anchor*” referring to its long and sickle-like *ancora*.

Diagnosis. This new species is similar to *Oxyoides bambianshensis* Fu et Zheng, but can be distinguished from the latter by median segments of antennae about two and a half to three times as long as broad, interocular space wider, about one and a half times as wide as frontal ridge between antennal socket, epiphallus peculiar in shape, *ancora* long and sickle-like, densely covered with small spines.

Oxyoides wulingshanensis Zheng et Fu, 1994

Oxyoides wulingshanensis Zheng et Fu, 1994. *Acta Zootaxonomica Sinica*, 19 (1): 100.

Oxyoides wulingshanensis Zheng et Fu; Li and Xia, 2006. *Fauna Sinica, Insecta*, 43: 88.

Oxyoides wulingshanensis Fu, Peng et Zhu, 1995. *Entomology Research*, 1: 58, new synonym.

Male. Body medium sized. Head shorter than pronotum. Vertex convex in dorsal view, with fastigium rounded, lateral foveolae absent; interocular space equal to width of frontal ridge between antennal socket. Antennae filiform, with median segments about two and a quarter times as long as broad. Eyes oval. Pronotum cylindrical, with straight anterior margin, bluntly angulate posterior margin and distinct median keel throughout. Prosternal spine subconical, slightly compressed anteroposteriorly, nearly lamellated, apex pointed. Both tegmina and hind wing reduced, slightly separated from each other along dorsal keel of abdomen; tegmina not reaching the middle of the third abdominal segment; apex of tegmina narrowly rounded. Hind wing slightly longer than tegmina. Hind tibiae expanded in apical half to form lamellate margins. Supranal plate triangular, as long as broad, apex pointed. Subgenital plate short and conical, apex truncate in dorsal view.

Body yellowish green. Dorsum of head and pronotum, tegmina yellowish brown; postocular band

black; frons, gena and lateral lobe of pronotum, legs and abdomen yellowish green; knee lobes of hind femora with darker color; metatibial spines black in the apical half.

Body length 20 mm, pronotum length 4 mm, tegmina length 7 mm, hind femur length 11.5 mm.

Female unknown.

Material examined. Holotype ♂, China, Zhangjiajie (present name for former Dayong), Hunan Province (29°10' N, 110°50' E), 17 Aug. 1990, PENG Guo-Sheng.

Distribution. China (Hunan).

Remark. Fu, Peng et al. (1995) proposed a new species name, *Oxyoides wulingshanensis*, without any morphological description, illustration and designation of type specimen, resulting in a nomen nudum taxonomically. Moreover, this species name is based on the same type specimen as *O. wulingshanensis* Zheng et Fu, 1994. Therefore, *O. wulingshanensis* Fu, Peng et Zhu, 1995 should be a junior synonym of *O. wulingshanensis* Zheng et Fu, 1994.

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REFERENCES

Fu, P and Zheng, Z M 1999a. Two new species of grasshoppers from Bamiashan Natural Reserve in Hunan (Orthoptera: Catantopidae). *Acta Zootaxonomica Sinica*, 24 (4): 384-387. [动物分类学报]

Fu, P and Zheng, Z M 1999b. The karyotype and G banding pattern of a species of the genus *Oxyoides* (Orthoptera: Catantopidae). In: *Zoological Society of China* [ed.], *Zoological Study in China*. China Forestry Publishing House, Beijing 945-949, plate 33.

Fu, P, Peng, G S and Zhu, X N 1995. A survey of grasshopper from Hunan Province. In: Lian, Z M [ed.], *Entomology Research*, Volume 1. Shaanxi Normal University Publishing House, Xi'an. 56-60.

Li, H C and Xia, K L 2006. *Fauna Sinica, Insecta*, Vol. 43, Orthoptera, Acridoidea, Catantopidae. Science Press, Beijing. 736pp.

Zheng, Z M and Fu, P 1994. A new genus and new species of grasshopper from Hunan Province (Acridoidea: Catantopidae). *Acta Zootaxonomica Sinica*, 19 (1): 100-103. [动物分类学报]

拟稻蝗属及一新种记述 (直翅目, 斑腿蝗科)^{*}

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摘要 补充描述拟稻蝗属 *Oxyoides* Zheng & Fu 的 2 个已知种, 即八面山拟稻蝗 *O. bamianshanensis* Fu et Zheng 和武陵山拟稻蝗 *O. wulingshanensis* Zheng et Fu, 并记述 1 新种长锚拟稻蝗 *O. longiandorus* sp. nov.。*Oxyoides* Fu, Peng et Zhu, 1995 被确定为拟稻蝗属 *Oxyoides* Zheng & Fu, 1994 的新异名, *O. wulingshanensis* Fu, Peng & Zhu, 1995 为武陵山拟稻蝗 *O. wulingshanensis* Zheng & Fu, 1994 的新异名。编制了该属已知 3

种的分种检索表。新种长锚拟稻蝗 *O. longiandorus* sp. nov. 与八面山拟稻蝗 *O. bamianshanensis* Fu & Zheng 相似, 主要区别是: 触角中段一节长为宽的 2.5~3.0 倍, 复眼间距为颜面隆起在触角窝之间的宽度的 1.5 倍, 阳茎基背片形状奇特, 锚状突长, 呈镰刀状, 表面密布小刺。模式标本保存在广西师范大学生命科学学院昆虫标本室。

关键词 拟稻蝗属, 斑腿蝗科, 直翅目, 新种, 中国.

中图分类号 Q969.26

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